RF Exposure Assessment

Rev. A2

FCC ID: XHHBNRZ100

With prior consultation with FCC, RF exposure compliance is assessed based upon transmission time duty factor.

Transmission time duty factor is calculated with the following TX/RX sequence in one turnaround time:

Cellular Network Duty Cycle Calculation for single turnaround time based upon GPRS single slot

a. Total TX time: 0.075 seconds
b. Total RX time: 10.94 seconds
c. Turnaround time: 11.015 seconds

Cellular Duty Factor: 0.075/11.015= 0.68 %

WiFi Network Duty Cycle Calculation for single turnaround time

a. WiFi Authentication : 0.014 seconds(TX)
b. Single request : 0.002 + 0.00048 seconds(TX)
c. Shortest download reply: 1.36 seconds(RX)
d. WiFi Duty Factor: 0.017/1.377=1.23%

RF conducted power measurement						
Band	GSM850/Average/dBm			GSM 1900/Average/dBm		
Channel	128	189	251	512	661	810
GPRS/Class 8	31.72	31.73	31.63	28.50	28.54	28.65
GPRS/Class 10	31.65	31.66	31.55	28.34	28.20	28.43
EGPRS/Class 8	27.10	27.00	26.85	25.70	25.45	25.32
EGPRS/Class 10	26.70	26.70	26.11	25.69	25.39	25.29
Source-based Time Averaging						
GPRS 8/12.5%	22.69	22.70	22.60	19.47	19.51	19.62
GRPS 10/25%	25.63	25.64	25.53	22.32	22.18	22.41
EGPRS 8/12.5%	18.07	17.97	17.82	16.67	16.42	16.29

EGPRS 10/25%	20.68	20.68	20.09	19.67	19.37	19.27

Mode	Channel	RMS Power(dBm)	
UMTS FDD Band II	9262	22.74	
	9400	22.11	
	9538	22.17	
UMTS FDD Band V	4132	22.78	
	4182	22.74	
	4233	22.51	
Mode	Channel	Subtest	RMS Power(dBm)
FDD II HSDPA	9262	1	22.34
		2	22.34
		3	22.54
		4	22.53
	9400	1	22.63
		2	22.53
		3	22.43
		4	22.47
	9538	1	22.67
		2	22.12
		3	22.32
		4	22.45
FDD V HSDPA	4132	1	22.35
		2	22.52
		3	22.41
		4	22.43
	4182	1	22.92
		2	22.52
		3	22.41
		4	22.43
	4233	1	22.50
		2	22.13
		3	22.32
		4	22.43

Mode	CH	Frequency (MHz)	RF Conducted Average Power (dBm)
11b	CH1	2412	15.12
	CH6	2437	14.55
	CH11	2462	14.21
11g	CH1	2412	14.56
	CH6	2437	14.65
	CH11	2462	14.74

The max. average output power in 850 MHz band is 25.64 dBm/ 366.44mW.

The max. average output power in 1900 MHz band is 22.78 dBm/189.67mW.

The max. average output power in 2400 MHz band is 15.12 dBm/32.51mW.

Consideration transmission time duty factor, adjusted average powers are:

850 MHz band= 366.44 x 0.0068=2.49 mW < 70.59 mW ((60/f(GHz))

1900 MHz band = 189.67 x 0.0068=1.29 mW < 31.58 mW ((60/f(GHz))

For WiFi network,

2400 MHz band= 32.51 x 0.0123=0.399 mW < 25 mW ((60/f(GHz))

Due the adjusted averaging power based upon transmission duty factor is below SAR power threshold, SAR evaluation is not required for this hand-held device.